



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

MV

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/533,761	05/04/2005	Roger Ian Crickmore	05-359	6330
20306	7590	09/14/2007	EXAMINER	
MCDONNELL BOEHNEN HULBERT & BERGHOFF LLP			PIHULIC, DANIEL T	
300 S. WACKER DRIVE			ART UNIT	PAPER NUMBER
32ND FLOOR			3662	
CHICAGO, IL 60606				
MAIL DATE		DELIVERY MODE		
09/14/2007		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/533,761	CRICKMORE ET AL.	
	Examiner	Art Unit	
	Daniel Pihulic	3662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 20 July 2007.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1,2,4,6,7,11-13,18-21,23,25-34 and 36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1,2,4,6,7,11-13,18-21,23,25-34 and 36 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____. | 6) <input type="checkbox"/> Other: _____. |

1. Applicant's arguments, filed 7-20-2007, with respect to the rejected claims have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, new grounds of rejection is made in view of US6955085, US4951271, and US5227624 .
2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.
3. The disclosure is objected to because of the following informalities: the term "amplifcation" appears to be misspelled on page 4, line 23. Appropriate correction is required.
4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the

international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 2, 4, 6, 7, 18-21, 25-29 and 36 are rejected under 35 U.S.C. 102(b) as being anticipated by US6955085. The US6955085 reference discloses the utilization of a vibration sensing device comprising: a hollow flexextensional body (12) having a cross section that has a major (4) and a minor (5) axis, said flexextensional body being operable to deform in response to received vibrational energy; a mass (14) mounted on said flexextensional body such that vibrational energy received along said minor axis causes acceleration of the mass, and a sensor (20) coupled with the flexextensional body along said major axis (see figure 1A) as recited in claims.

With regards to claim 2, the US6955085 reference discloses measuring a force (see the abstract).

With regards to claim 4, the US6955085 reference discloses an outer housing for housing (41).

With regards to claim 6, the US6955085 reference discloses the mass being mounted to said flexextensional body in the proximity of said first end (13) of said minor axis (5).

With regards to claim 7, the US6955085 reference discloses the flexextensional body (12) is mounted to said outer housing (41) via mounting means(32).

With regards to claims 18 and 19, the US6955085 reference discloses measuring acceleration or strain (see column 2, lines 28-29).

With regards to claim 20, the US6955085 reference discloses optical fiber sensors (see the abstract).

With regards to claim 21, the US6955085 reference discloses the optical fiber is coupled under stress to said flexextensional body (see column 2, lines 39-41).

With regards to claim 25, the US6955085 reference discloses the optical fiber is coupled to said flexensional body such that both ends of said optical fibre are accessible for optical coupling to further optical devices (see figures 4 and 5).

With regards to claim 26, the US6955085 reference discloses three vibration sensing devices mounted such that the axes along which respective sensors are coupled are arranged orthogonally to one another (see figure 4).

With regards to claim 27, the US6955085 reference discloses measuring pressure (see column 1, line 10).

With regards to claim 28, the US6955085 reference discloses a plurality of vibration sensing arranged in optical communication with each other (see figure 4).

With regards to claim 29, the US6955085 reference discloses the vibration sensing devices are arranged in series (see figures 4 and 5).

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over US6955085 as applied to claims 1, 20, 28 and 29 above, and further in combination with US4951271. The difference between the US6955085 reference and claim 11 is that the claim recites the utilization

of an elliptical cross section. The US4951271 reference teaches that it was well known in the art to utilize optical sensors with an elliptical cross section (see figure 3). It would have been obvious to modify the US6955085 reference to utilize an elliptical cross section as motivated by the US4951271 reference to enable the US6955085 system to increase sensitivity (see columns 4 and 5).

With regards to claim 12, the US4951271 reference discloses a mass (100) mounted within a hollow flexextensional body (20, see figure 5).

With regards to claim 13, the US4951271 reference discloses an outer wall (20) having a substantially uniform thickness (see column 3, lines 35-36).

With regards to claim 23, the US4951271 reference discloses blocks (102) mounted on the outer surface of said flexextensional body at either end of said major axis (105), said optical fiber (110) being coupled to said flexextensional body by being wound around said blocks (see figure 5).

With regards to claims 32 and 33, the US4951271 reference discloses a parallel configuration (see figure 5) and the US6955085 reference discloses WDM (see column 8, lines 38-40).

8. Claims 30, 31 and 34 are rejected under 35 U.S.C. 103 as being unpatentable over US6955085 in combination with US4951271 as applied to claim 28 above, and further in combination with US5227624 . Claim 30 additionally recites the utilization of partial radiation reflectors. The US5227624 reference teaches that it was well known in the art to utilize partial radiation reflectors (14). It would have been obvious to modify the previous combination of references to utilize partial radiation reflectors as motivated by the US5227624 reference to enable the system to increase multiplexing gain and enhance overall performance.

With regards to claim 31, the US5227624 reference discloses TDM (see column 1, lines 38-50).

With regards to claim 34, the US4951271 reference discloses a parallel configuration (see figure 5) and the US6955085 reference discloses WDM (see column 8, lines 38-40).

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dan Pihulic whose telephone number is 571-272-6977. The examiner can normally be reached on Tuesday through Thursday and every other Monday and Friday from 5:30 a.m. to 4 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Tarcza, can be reached on 571-272-6979.

The fax phone numbers for the organization where this application or proceeding is assigned are:

571-273-8300 for official responses, and
571-273-6977 for unofficial communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the telephone number 800-786-9199.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197.

/Daniel Pihulic/
Daniel T. Pihulic
Primary Patent Examiner
T.C. Art Unit 3662